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SAFETY DIGEST

March 1964

UNITED STATES ARMY MATERIEL COMMAND
WASHINGTON, D.C. 20315

FOREWORD

The Safety Digest is an AMC Pamphlet prepared by the Safety Division, U. S. Army Materiel Command. Its purpose is to disseminate information which can materially influence and improve safety programs at all Command establishments.

Articles are included to supplement technical knowledge as well as practical knowledge gained through experience. They provide a basis for the further refinement of safety measures already incorporated in operating procedures and process layout. To achieve maximum effectiveness, the Safety Digest should be given widespread circulation at each AMC establishment.

Articles appearing in the Safety Digest are unclassified and are not copyrighted. They may be reproduced as desired in order to bring pertinent accident prevention information to the attention of all employees.

Unclassified material believed to be of interest or benefit to other establishments is welcomed for publication in the Safety Digest. Please send articles for review to: U. S. Army Materiel Command Field Safety Agency, Charlestown, Indiana. If possible, include pictures, charts, drawings, and illustrations that clarify and heighten interest in your presentation.

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Front Cover - Arctic infantrymen using tactical skiing techniques near Anchorage, Alaska. Photo by SP/5 Henry J. Hamilton was a D/A first-prize winner. Inside Front Cover. Sergeant Missile on launcher. Outside Rear Cover. Nike Hercules being fired.

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U. S. ARMY MATERIEL COMMAND FIELD SAFETY AGENCY
INSTITUTE OF TECHNICAL INFORMATION

Although the word does not appear in its name, the Army Materiel Command Field Safety Agency, located at Charlestown, Indiana, is an institute of technical safety information. The Army Materiel Command uses this information at installations and activities throughout the United States in accident prevention programs.

The mission and functions of the AMC Field Safety Agency fall into two closely related working areas. One is the collection of the information that is needed for use by safety personnel and management throughout the Army Materiel Command. The other is the dissemination, by a variety of means, of the accumulated technical knowledge and doctrine on safety matters to the individuals who will make use of it.

The work of collecting information ranges from the daily compilation of data from reports of all recordable accidents that have occurred at Army Materiel Command installations and activities to conferences and visits that may be required to obtain safety doctrine on the newest weapon system.

Once each month the AMC Field Safety Agency reports to the Commanding General of the Army Materiel Command and to the commanders of all the AMC subordinate commands, installations, and activities on its current measurement, in statistical terms, of their safety programs. The information appears in the AMC Statistical Summary of Accidents, which is compiled from data recorded from accident and exposure reports.

The same data is used by the AMC Field Safety Agency whenever a subordinate command, installation or activity is considered for an Army Materiel Command or National Safety Council safety award. Statistical eligibility is computed or verified and forwarded to the level where the decision on the award will be made.

Information from the report and statistical files is also provided for use in the Agency's activities related to the AMC Safety School, the Safety Digest, accident abstract reports, safety information letters and procurement of safety promotional materials.

A large part of the safety promotional material used by the Army Materiel Command installations and activities is procured by the AMC Field Safety Agency. The items regularly purchased and distributed range from a single small poster to thousands of copies of monthly pamphlets.

Material intended for publication in this issue of the Safety Digest was collected, reviewed and in part written at the AMC Field Safety Agency and submitted to the Army Materiel Command for publication.

The largest activity of the AMC Field Safety Agency, in number of personnel involved and in personal contact with representatives of installations and activities throughout the United States, is the AMC Safety School.

Since it was organized in 1951, the AMC Safety School has trained thousands of students in its courses at Charlestown and in field training classes at individual installations and activities.

Ten different safety courses, all of one or two weeks duration, are offered during the FY 1964 school year. These range from introductory safety for personnel newly assigned to safety duties to advanced subjects such as ammunition, explosives and chemical, bacteriological and radiological safety; nuclear weapons safety; guided missile and rocket safety; applied safety in industrial health and hygiene; industrial safety; and safety management. The demand for some of the courses is so great that they are repeated one or more times during the school year.

Although individual courses on safety subjects are offered at other schools and defense organizations, none of these training bodies compare with the AMC Safety School in the wealth of the safety subject matter covered pertaining to AMC safety. The courses are tailored to meet the specific safety training needs of Army Materiel Command installations and activities, and are reviewed and revised constantly to make certain that they include the most recently developed safety doctrine and procedures.

Since the objective of the AMC Safety School is to prevent accidents by increasing the technical competence of the personnel responsible for safety activities at Army Materiel Command installations and activities, priority in assignment of class spaces is given to AMC civilian and military personnel and to employees of contractors who operate AMC facilities. As available, spaces are also assigned to representatives of the other Army commands and the other military services. Requests for spaces frequently exceed the supply.

Students at the AMC Safety School benefit from the instruction given them and from their pooling of knowledge with individuals who have similar problems and experiences.

In its field training activities the AMC Safety School emphasizes instruction to meet specifically identified needs rather than the presentation of standardized courses. A typical field training project consists of helping an installation prepare its own training course to meet its own needs and then providing instructors to present a part of the first course. The installation is then prepared to continue with the training of additional groups of its personnel.

AMC installations that have candidates for attendance at safety training courses sponsored by the Department of the Army submit their requests to the AMC Field Safety Agency for screening. Priority listings are then prepared and submitted to the Commanding General, AMC, ATTN: Safety Division for approval and transmittal to the Deputy Chief of Staff for Personnel.

The activities performed by the AMC Field Safety Agency are integral parts of the comprehensive Army Materiel Command program of preventing accidents, injuries and property damage while providing the safest possible material for the American soldier.

* *

CHECK DISPLAYED AMMUNITION COMPONENTS

An enlisted man was recently fatally injured when an ammunition component, removed from a display board, functioned during handling.

AR 385-65, 29 January 1958, requires that ammunition items or components used for museum or display purposes shall be empty or inert and shall be properly marked.

SAFETY MESSAGES

Get out of the traffic line when you look for an address, for directions, or before stopping to orient yourself.

When someone cuts you off on the road, remember you are the driver of a machine not a knight in armor on a horse.

Pull off the highway first, then park.

Detroit Procurement District, USA

THE AMC SAFETY EQUIPMENT EXHIBIT

Recognizing the fact that Army safety personnel should be shown as well as told about currently available safety products, the AMC Field Safety Agency, Charlestown, Indiana, has assembled one of the most complete exhibits of safety equipment in the United States.

Over 450 different items have been obtained from 165 companies since the safety equipment exhibit was established in 1961. The number of products shown and the total of participating firms continue to grow as new and improved products become available.

The exhibit was the outgrowth of an instructor's need for a lifting hook with a safety guard to illustrate a point to an AMC Safety School class. The discussion of this and other products needed for classroom use led to the development of the concept of a comprehensive safety equipment exhibit.

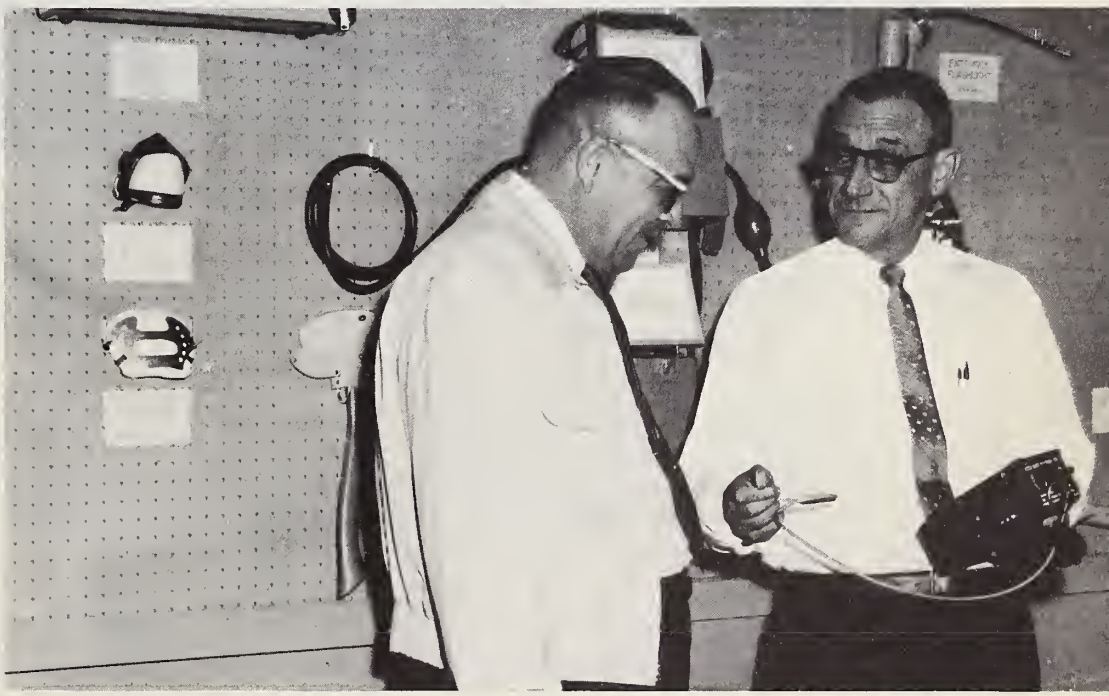
The Agency's budget did not permit the purchase of the many, and often expensive, items needed for the exhibit. Industry was, therefore, invited to make its products available, at no cost to the government, for display to safety personnel. It was made clear to both the exhibitors and later the viewers that the Army's action in permitting items to be displayed was not an indorsement of any product.

The response to the invitations to participate was prompt and favorable. Scores of firms accepted and forwarded samples of their safety products, and the exhibit was soon established.

All students who attend the AMC Safety School are benefited by the safety equipment exhibit. Classroom use is made of needed items. Guided tours through the exhibit are made as a part of the course of instruction, and students are given ample opportunities to examine individual products during class intermission periods.

Though it cannot be measured in specific units, the success of the safety equipment exhibit has exceeded all expectations in terms of visible interest and increased knowledge which students are able to use to improve safety at their installations.

Students viewing safety exhibits during guided tour.



Students discussing safety equipment from exhibit.

The AMC Safety Equipment Exhibit.

WRITING FOR THE SAFETY DIGEST

The following suggestions are made to assist the individual who is writing articles for possible publication in the AMC Safety Digest.

Type of Material Desired. The Safety Digest publishes articles, photographs, drawings, questions and answers, information on adopted safety suggestions and other material on safety that will interest a wide range of AMC personnel. If you have useful information that will benefit or interest personnel at other installations, you are urged to send it to the Director, U. S. Army Materiel Command Field Safety Agency, Charlestown, Indiana.

Length. Preferred length of articles is 600 to 950 words, which will fill either two or three pages of single-spaced copy in the Safety Digest. One-page articles of about 275 words are needed. If your article does not conform to any of these lengths, send it anyway.

Fillers. Short items of two or three paragraphs are required for use as fillers, or for one-page use with pictures.

Format. Forward typed, double spaced copy. All material must be edited before it can be used, and the space between the lines provides room for corrections, typing instructions, etc.

Title. Give your article a short title that tells what it is about. A title that exceeds seven words is an uncommonly long one. Note the brevity of the titles used in your favorite magazine.

By-Line. If your article is typed one page or more in length, add a by-line below the title. The by-line should contain the name of the author, his position (safety officer, garage foreman, etc.) and the name of his installation. Keep the information short enough to fit into two lines of large print.

Illustrations. Furnish photographs or drawings whenever possible. Make certain these are related to information in the copy, are clear and are accompanied by captions that explain them. If an editor cannot understand how the picture relates to the article, he will not use it.

Originality. Submit original articles only. Most published material is copyrighted and reuse of it (without permission, credit and at times payment) is illegal.

Timeliness. Much of the material published in the Safety Digest must be written months in advance of its appearance in order that it may be edited and the issue as

a whole organized. An article on a seasonal topic, such as winter driving, boating safety or vacation hazards, should reach the AMC Field Safety Agency at least four months before the date of the issue in which it will be timely.

How to Write an Article. An experienced writer used the following method which makes his work easier:

a. He selects or is assigned a subject.

b. He gathers information and reviews the knowledge he already has on the subject.

c. He decides what is interesting and important.

d. He organizes or outlines the manner in which he will present the information, bearing in mind that it will be read by complete strangers who have less knowledge than he has gathered.

e. He writes the article, ordinarily using the following "plot".

(1) An introductory paragraph, that catches the eye of the reader and creates a desire to read the article.

(2) The body of the article, which presents the subject matter in an organized, clear manner.

(3) The conclusion, which is usually a one or two paragraph summary of the idea or subject matter presented in the article as a whole.

Will Your Article Be Used? If you have something worth saying the chances of your article being used are excellent. Some stories will not be used. Do not be discouraged if yours does not appear. Famous authors do not always find a publisher for some of their copy. Some articles may be held for several months until they can be used to the best advantage.

Will Your Article Appear Just as You Have Written It? It may, but the chances are that it will be necessary to edit it to some extent to fit it into available space. Any changes that are necessary will be made by skilled personnel who have technical and professional backgrounds in the fields of safety and writing. Any changes they make should improve your article.

Where Can You Secure Additional Help? Questions addressed to the Director, AMC Field Safety Agency will be answered promptly.

How Can You Improve Your Writing? Organize your material carefully. Strive to express your thoughts clearly and simply in short, every day words, uncluttered sentences, and brief paragraphs. Do not try to impress others with your extensive, complex knowledge and vocabulary. Remember that you are trying to make a stranger understand something that he needs to know.

Classification. Do not submit material which is classified or which will require the AMC Field Safety Agency to seek further clearance as a part of its review. If your article requires clearance before release to the general public, as represented by the readers of the Safety Digest, secure any clearance that may be required by AR 380-5 before forwarding it.

The individuals who assemble the material published in the Safety Digest will appreciate your contribution of articles, which are needed in order that the best available information on safety subjects may be disseminated and put into use throughout the Army Materiel Command.

SAFETY THOUGHT - HOW LUCKY ARE YOU?

Almost every expert driver credits luck as the reason for his success as a safe driver. It's a strange thing, though, "the harder you work - the luckier you get."

Most drivers measure their luck in their ability not to have caused accidents or not to have been given traffic tickets. The near misses, narrow escapes and frightening experiences are too quickly forgotten.

It has been estimated that the average driver makes 7,500 driving errors between each traffic ticket he gets. Of course, some drivers never get a traffic ticket following a driving error - those who are not detected and those who never get another chance.

How is it with you? What is your score? In this case, the only one who needs to know is yourself.

As a driver, you need more than luck to prevent being involved in accidents. It's not enough not to have caused an accident. Today, you must be on the lookout for other drivers' unusual driving actions. When you tailgate, drive too fast for conditions and are not prepared to yield your right-of-way, you make it real tough for "luck" to work for you. Under such conditions, even a rabbit's foot is no help.

Remember, the rabbit's foot wasn't lucky for the rabbit who lost it.

Detroit Procurement District, USA

GRINDING WHEELS

Howard L. Schultz, SMC Safety Field Office

A recently distributed abstract report gave an account of an accident caused by explosion of an abrasive wheel. Many persons who may have the abstract report will probably say to themselves, "It couldn't happen here." In any event, we thought this accident, although serious in nature, presented us with an opportunity to look at an industrial type operation which is probably the most common type encountered in day-to-day shop operations.

The grinding wheel is probably the most common type of industrial equipment. It is used on more operations and by more people than any other type of equipment and accounts for a large number of injuries. Because grinding wheels are common to most industries, many uninstructed and unauthorized persons use them incorrectly and create serious accident problems. Comparatively few operators are aware of the many hazards connected with grinding wheels.

Many grinding wheel accidents involve the breaking of wheels, and the operator's coming in contact with the wheel while it is in motion. Flying particles from broken wheels are projected outward at extremely high velocity.

The abrasive wheel is a fragile structure presenting exceptional hazards if subjected to abuse, either when handled or operated. However, little trouble is experienced if the wheel is handled carefully, mounted correctly, operated at rated speed and properly guarded. Operators must be educated in and follow safe practices.

The space about the grinder should be kept dry, clean, and as free as possible from slipping and tripping hazards. Each grinder and working area adjacent to it should be well illuminated.

A wheel used in wet grinding should never be allowed to stand partly immersed in water. The water-soaked portion will throw the wheel dangerously out of balance.

As soon as a wheel is received from the manufacturer, it should be unpacked and carefully inspected for damage it may have suffered in shipment. It should also be given the "ring" test by a qualified person.

Care in handling and storing the wheels is extremely important because if they fall, they may crack or break. Wheels have been known to break when stored in a freezing temperature while wet. Breakage has also resulted from a sudden increase in temperature of the grinding surface caused by a wheel being taken from a cold storeroom and having the work applied to it too quickly. Work on a cold wheel should be started gradually, so that the wheel can warm up uniformly.

After a new abrasive wheel has been mounted and before the power is applied, the wheel should be turned by hand for a few revolutions to make sure that neither the hood nor the work rest comes in contact with the wheel.

New wheels should be run at the start at full operating speed for at least one minute before work is applied, and during this time, the operator should stand to one side because most defective wheels break when starting.

Many wheels have broken, causing injury to operators, because work has become wedged between the work rest and the wheel. Many accidents of this kind may be prevented if the work rest is substantially constructed and securely clamped in position not more than 1/8 inch from the wheel. The position of the work should be checked frequently. The rest must never be adjusted while the wheel is in motion. The rest may slip and strike the wheel and break it, or the operator may catch his fingers between the wheel and the rest and be severly injured.

Grinding on the flat sides of straight wheels is often hazardous and should not be allowed.

Only competent men should mount, inspect, and care for grinding wheels, and it is suggested that one man be assigned to do this work.

ACCIDENT EXPERIENCE, CHRISTMAS - NEW YEAR PERIOD

During the period 0700 hours, 20 December 1963 to 1700 hours, 2 January 1964 (a total of 322 hours), 27 military personnel -- 18 in CONUS -- died as a result of accidents. Both in total fatalities and fatalities per hour (one death every 18 hours), this represents the lowest death rate recorded for this leave period since 1955 when such statistics first became available. During FY 63, one military fatality was recorded each 10.6 hours.

The control measure initiated this year which established an 0700-hours departure time for leaves and a return time of 1700 hours -- resulting in most of the driving by servicemen being accomplished during daylight hours -- is believed to have had a positive effect on accident experience during this holiday leave period. In this regard, not a single fatality was recorded in CONUS on the first and last days of the official leave period.

All commanders concerned are to be commended for their implementation of elements of the Army Safety Program which brought about this improvement in the accident experience for the Christmas- New Year leave period.

REFERENCE PUBLICATIONS

TB Med 269 29 November 63	Carbon Monoxide Poisoning Etiology, Symptoms, Treatment and Prevention
AMC Regulation 715-508 23 July 1963	Procurement - Inspection Administrative Procedures (Section IV - Safety)
AMC Regulation 755-3* 28 January 1964	Disposal of Supplies and Equipment - Demilitarization and Disposition of Small Arms Weapons and Disposal of Inert Parts and Components of Missiles and Special Weapons
AR 10-11 31 December 1963	Organization and Functions - United States Army Materiel Command (Paragraph 4d, Safety Functions))

REFRIGERATING SYSTEMS, UNIT--EXPLOSION HAZARD

Listed household refrigerators are not equipped with explosion-proof controllers or door switches. Their use to cool flammable liquids in open vessels may result in explosions of vapor-air mixtures due to ignition by controller or door switches. Such explosions may be dangerous to personnel and result in property damage.

Insurance companies have reported losses from this practice. One case involved a small domestic refrigerator in which had been placed a bottle of ether-alcohol mixture. The explosion wrecked the refrigerator.

Refrigerating equipment, to be safe for such use, must be specially designed so as to safeguard all possible sources of ignition inside the refrigerated compartment. U.L.I. is now listing such refrigerators of the commercial, self-contained, reach-in type under Guide No. E369E3 in the Hazardous Location Equipment List.

Explosion-proof electrical equipment should be employed in connection with all refrigerators in which explosive mixtures may occur. Even if located outside the refrigerated compartment, explosion-proof electrical equipment will be safer as opening the refrigerator containing an explosive mixture may allow some of the mixture to reach electrical sources of ignition.

Underwriters' Laboratories, Inc.

SAFETY IS KEY WORD IN DISEASE STUDY

Frank Rodriguez, Dugway Proving Ground

Unique among research agencies working for the nation's defense is the Ecology and Epidemiology (E&E) Branch at Dugway Proving Ground, the Army's test site for chemical and biological defensive material.

Operating over an area larger than Rhode Island, E&E's mission involves the continual charting of the status of infectious diseases spread by wildlife in and around the Great Salt Lake Desert area.

In addition to the tests and studies required by Dugway's large testing program, the E&E Branch works in close cooperation with state and federal health agencies and the Department of Agriculture. Joint efforts are carried on in an extensive disease surveillance program.

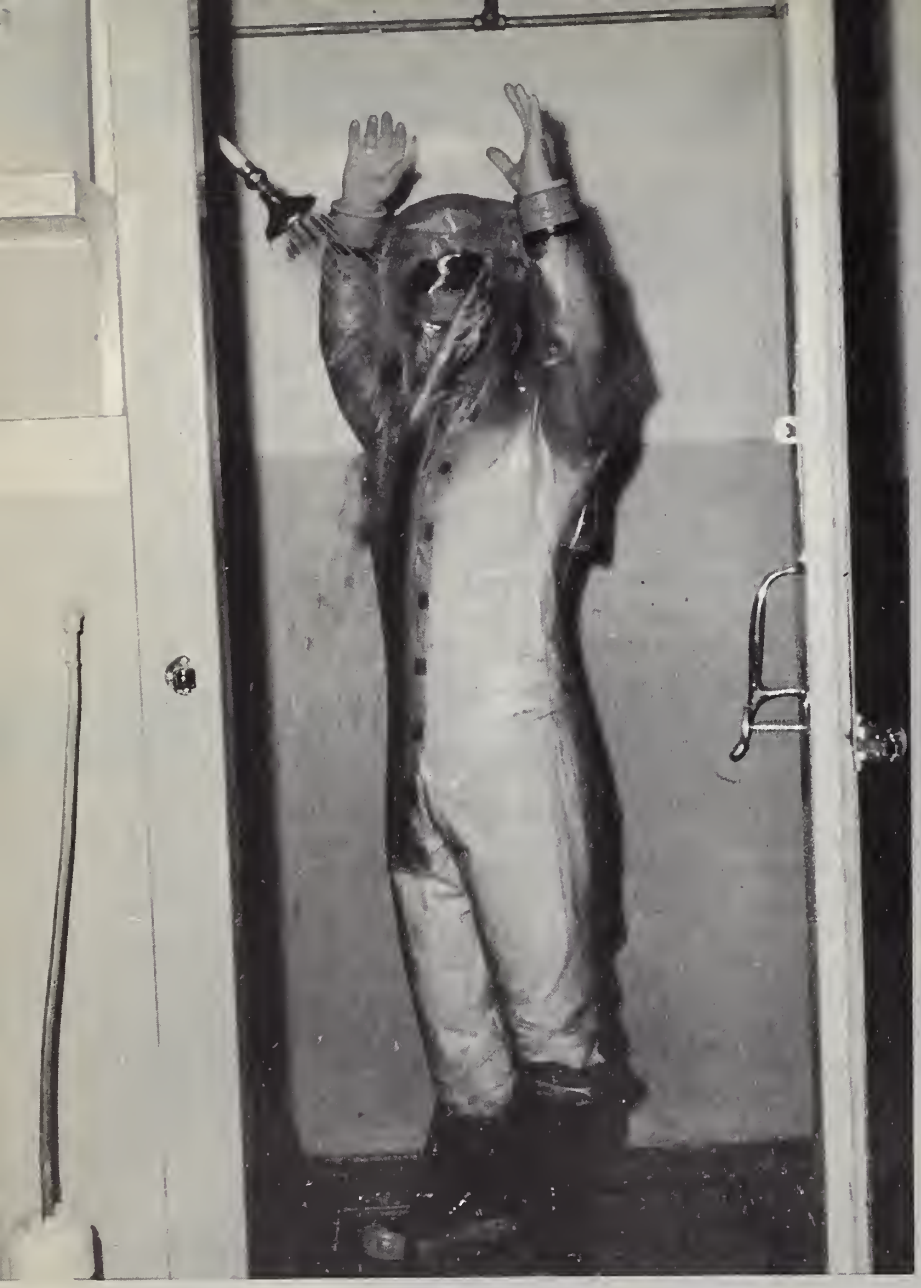
The branch's scientists and technicians work with over 44 species of rodents, 130 birds, many species of ticks, lice, mites and fleas, 250,000 head of cattle and 500,000 sheep and horses, all indigenous to the Dugway area, studying habitats and diagnosing through serological tests for carriers and transmitters.

Because of the possibility of disease transmission to the skilled laboratory personnel, safety within the E&E facilities presents a major area of concern and planning. The resultant safety program includes the prime phases of operations, individual protection, area classification and handling techniques.

In the laboratory, individual protection is obtained through use of airtight clear plastic ensembles equipped with self-contained air supplies, boots and gloves hermetically sealed to the plastic suits. Periodic inoculations are also given against diseases most likely to be encountered.

This individual protection is enhanced by classifying operating areas into "hot" or "cold" -- according to whether they contain infectious atmospheres. An elaborate arrangement of air locks, filter units, negative air pressure and sewage decontamination systems insures that uncontaminated areas are kept "cold". Acid-detergent showers provide an effective cleansing method to allow passage from one area to another.

Equipment handling is accomplished through the use of specially designed aerosol hoods and autoclaves. Instruments and test equipment are always sterilized before and after use to control laboratory contamination.



THE DECON SHOWERS - After leaving a laboratory containing live lethal test agents, all personnel must undergo a fifteen minute decontamination shower while dressed in their protective suits. The "decon" process involves a mixture of water, detergent and acids. This procedure is one of the prime safety measures taken in the Ecology and Epidemiology laboratories.

IN THE LAB - Each of the laboratories in the E & E building contains equipment used in either inhalation or transmission tests. In transmittal test labs technicians work with such animals as this guinea pig, which are placed in Class III aerosol hoods. The metal and glass hoods enable the lab personnel to conduct their tests with minimal exposure to infected animals.

TESTING HYPODERMIC SYRINGES FOR LEAKAGE

George J. Harris and G. Briggs Phillips
U. S. Army Biological Laboratories, Fort Detrick

Leaking syringes can cause accidents during laboratory work. Moreover, leakage can affect quantitation in the use of syringes. If corrosive, toxic, or infectious materials are used in syringes, separation of the needle from the syringe barrel can result in a spray that can have disastrous results. Accidents of this type can be avoided by a two-step control program.

The first step is to discard all syringes that are not of the needle-locking type (Luer-Lok or equivalent). Disposable syringes should not be used unless the needles can be locked to the syringe. Even when only needle-locking syringes are used, a significant number may sometimes leak at the lock-fitting. Therefore, the second step is to establish a testing procedure to evaluate the tightness of fit between the syringe lock and the needle hub. The procedure described below has proved satisfactory for discriminating between defective and acceptable lock-fitting syringes.

The testing procedure is based upon application of air pressure to a syringe barrel with a sealed needle attached. Evidence of leakage at the lock-fitting is the appearance of air bubbles when the syringe is immersed in water.

A special torque tool has been developed to assure repetitive fittings of needles to syringes. The torque developed is characteristic of the force nominally used by laboratory personnel in performing this function. The tool is a four-inch length of one-eighth inch diameter brass rod, one end of which is soldered at a perpendicular to the hub of a plugged needle (Figure 1). The distal end of the brass rod is weighted with 32 grams of lead (rod shaped, 1" x 3/8").

In testing, the needle is put on a syringe until the first sign of resistance is detected. This is accomplished with the syringe and the weight held in a horizontal plane. The weight is then allowed to fall freely through an arc to seat the needle on the syringe. The syringe barrel is next attached to a compressed air source with a length of heavy-walled rubber tubing. A variable pressure valve, with an air pressure gauge, is installed in the line between the air source and the syringe (Figure 2). The pressure is gradually raised from atmospheric to the pressure at which leakage first occurs at needle hub.

To protect the operator, all testing is performed behind a safety shield. Care is exercised to assure repetitive fitting of the tool to each syringe and to replace the plugged needle as it becomes worn.

Based upon a series of preliminary tests with samples from a shipment of faulty syringes and another shipment of syringes which had proved satisfactory in use, a maximum test pressure of fifteen pounds per square inch was chosen.

Following the preliminary tests, all available syringes from two separate shipments were tested (474 syringes from a shipment thought to contain faulty syringes and 141 syringes from a shipment felt to be satisfactory). Syringe sizes ranged from 1 ml to 10 ml. Table 1 shows the results of the leak tests. Leakage was determined in three pressure ranges: 1-5 psig, 5-10 psig and 10-15 psig. The data show that a simple test of this type can detect faulty syringes.

Table 1

Leakage of Syringe Barrel Locks Subjected to Air Pressure

	Per Cent Leakers	
Air Pressure (psig)	Acceptable Lot*	Suspected Lot**
1-5	none	14.2
5-10	1.3	16.3
10-15	14.3	20.6

* 474 syringes tested
** 141 syringes tested

No attempts were made to determine the pressures applied to syringes during normal usage because this will vary considerable due to usage. However, it is apparent that even good syringe are not designed to withstand pressures much over 15 psig. Visual examination of faulty syringes indicated that, primarily, leakage was attributable to damaged or faulty threads in the needle adaptor or to damaged or faulty needles. Prolonged use or abuse of adaptors or needles may also cause leakage at the fitting.

Syringes which were satisfactory for use in routine laboratory work, withstood air pressures of 10 psig without significant leakage. A high percentage of leakers was found in a lot of syringes which had proved faulty in use.

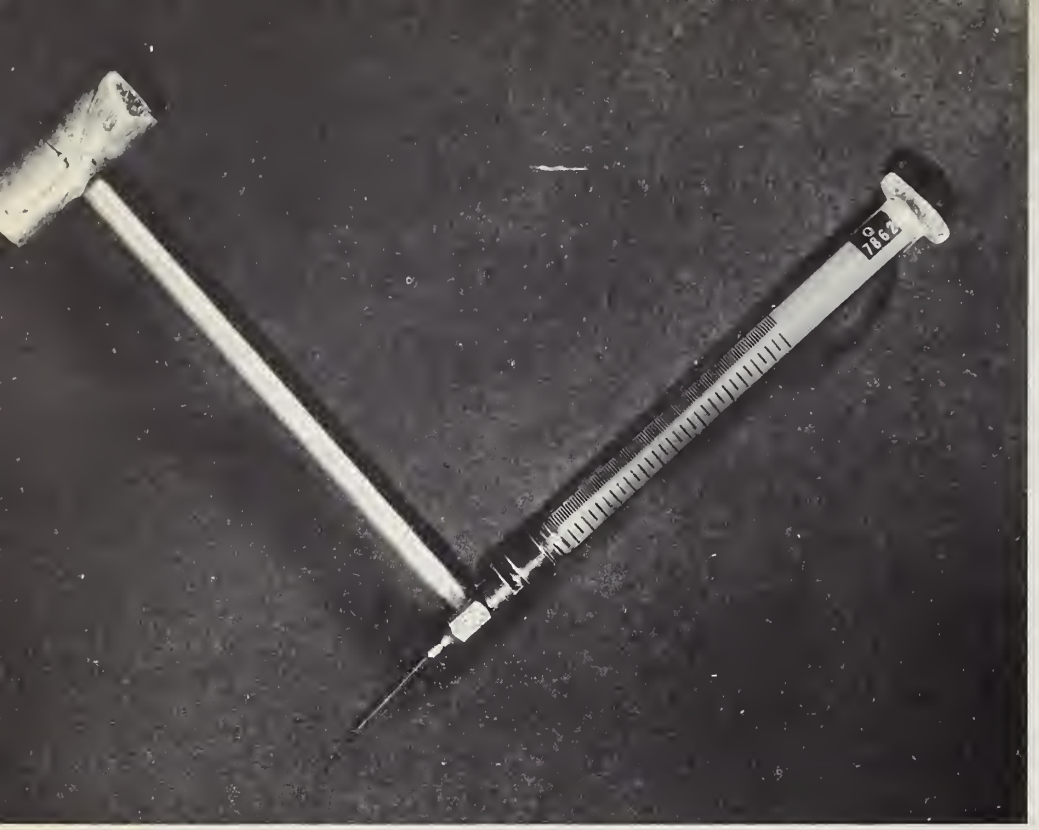


Figure I. Torque lever attached to needle on a syringe barrel.

Figure 2.
Completed assembly,
immersed in water,
behind safety shield.

CURRENT EVENTS

NO HANDS FOR THE LADDER

Two painters were removing screens and repainting the window trim of the headquarters building. In order to work on a second story window, a 16-foot extension ladder was raised. One man climbed while the other held the ladder. At the 11 foot level the workman stopped and began to take off the screen.

The top hanger on one side of the screen was unhooked easily. The second hanger was difficult to disengage. After the worker twisted and lifted the screen for several moments, it suddenly came completely free. The painter was left teetering off balance on a ladder rung, with both hands holding a window screen above his head. To avoid falling backwards, he dropped the screen and jumped. He came down hard on his right foot, fracturing two bones.

The practice of the installation was to make use of a portable metal scaffold or a ladder truck with platform when work was done on second story windows. Because of the location of a steam line and support posts the ladder truck should have been used at this window. Neither the truck nor the painter's foreman was present when he proceeded to use the extension ladder without instructions or authority.

HE BACKED INTO A SQUEEZE

The operator of an electric-powered fork lift truck was operating his machine within a 19' by 60' shop aisle. A tractor-trailer van, resting on its landing wheels, was parked at one end of the open area. The driver's assignment was to move a Conex container that was in a bay near the front end of the van.

Instead of turning the fork lift to make a forward approach to the bay, the operator backed down the aisle toward the trailer. As he approached it, his foot slipped from the brake pedal, and the fork lift continued to move backward. Before he could stop, the rear half of the truck moved underneath the van, pinning the driver against the steering wheel. Although two ribs were fractured, the operator remained conscious and was able to free himself by exerting sufficient strength to bend the steering post.

Photographs that accompanied the accident report showed that the fork lift was not equipped with a back and overhead guard that should have prevented the machine from backing beneath the van.

The following were included in the corrective actions taken:

1. Guides will be provided to assist fork lift drivers whenever backing operations in confined areas are required.

2. Immediate supervisors will exercise closer safety supervision over areas and employees under their control.

3. Aptitude, licensing and physical examination results will be reviewed with care by immediate supervisors.

FENCE STOPS DEADLINED TRUCK

The late model pickup truck used by the military police had been deadlined because of a broken front wheel brake cylinder. It was parked near the guard headquarters with the key in the ignition and with no attached sign or marking to show that it was not to be operated.

A soldier on guard duty entered the vehicle and without a trip ticket started the motor and drove toward a guard post. Approaching a four-way intersection at a speed of no more than 25 miles per hour, he applied the foot brake. He found the brakes were not operating. He then lost control of the vehicle while attempting to engage the hand brake. The truck proceeded across the intersection and was stopped by

the perimeter fence. Although the soldier escaped injury, damage to the vehicle and the fence was almost $300.

Corrective action included adoption of a procedure that required the ignition keys to be removed and a prominent "Deadlined" sign to be displayed on deadlined vehicles.

THE TRUCK THAT BURNED ITSELF

A crew leader and four linemen were drilling a hole for a power line pole. The drill was mounted on the rear of a heavy truck and received its power from the truck motor. The grass and weeds at the pole site had been mowed and left on the ground.

Shortly after the motor began to furnish power for the drill it was discovered that the grass was burning beneath the truck. Two available dry chemical fire extinguishers were used in an unsuccessful effort to extinguish the fire. An attempt was then made to move the truck, but the motor failed because of fire damage to the ignition system. The fire department was called. The motor and cab portion of the truck were "burned-out" before firemen arrived to extinguish the flames.

The grass fire was attributed to a spark discharged from the exhaust pipe when the governor was opened to furnish power for the drill. Action was taken to relocate the exhaust pipe on the vehicle and to equip it with a spark arrestor. An H_2O fire extinguisher was also added to the electrical crew's equipment.

RING FINGER AMPUTATED

An EM jumped from the bed of a trailer. In doing so, he caught his ring on one of the stakes on the side of the trailer. This resulted in a seriously torn finger. Medical authorities reported that the finger failed to respond to medical treatment and had to be amputated. Lost time was estimated to be fourteen days.

This accident was publicized. Additionally, troops were reinstructed in the proper method for dismounting from vehicles.

ACCIDENT DESCRIPTION NARRATIVES

Accident reports submitted by installations and activities sometimes leave the person who reads them wondering just what did happen.

Here are the texts of the narrative descriptions of two accidents, as reported in Section E of DA Forms 285.

"Even though investigation of this accident indicates some inattention of the driver, it also revealed that his vision was obscured by electrical high lines, perimeter fence, pipelines, etc."

"Roll of barb wire rolled off pallet as it was landed and struck him on left ankle."

Reporting instructions in paragraph 17a(1)(a)1, AR 385-40 include the following requirement:

"Information will be supplied in item 41 of Section E to present a word picture explaining the Who, What, Where, Why, and How of the accident."

In preparing the DA Form 285, bear in mind that what is written will, in most cases, be read by complete strangers who will know nothing about the accident except what is told in the report. When the narrative fails to present a complete story, the report is incomplete.

Many DA Forms 285 also contain a second serious defect. They do not include in Section E the "corrective action(s) taken (actual or anticipated) to prevent a serious accident." The requirement for this information is also stated in paragraph 17a(1)(a)1, AR 385-40

If you have an accident, your report should tell what happened and what you have done to prevent it from happening again. This information should help you and every person who reads the report to do more to prevent other accidents.

What is it? The photo shows an electric magnet mounted on a stake body truck.

Its purpose? Its purpose is to remove nails, spikes, tacks, bolts, and other metal objects from highways, roads, or any other smooth ground surfaces.

At Lone Star Army Ammunition Plant, approximately 400 Government-owned vehicles, and approximately 800 privately-owned vehicles are driven over Plant roads. Use of the electric magnet contributes to driving safety, including the prevention of unnecessary accidents, and damage losses.

This magnet periodically travels over approximately 55 miles of roads within the plant, removing small metal objects that inadvertently have been strewn in the paths of moving vehicles, despite safety precautions that are taken. Many of these roads are traveled several times daily by vehicles hauling explosives.

Results? This little-publicized, inexpensive operation is paying off dividends--road hazards are reduced, thereby allowing explosives materials, equipment, and personnel to arrive safely at their destination with a minimum loss of time. Truly, this operation provides that "extra margin" of safety.

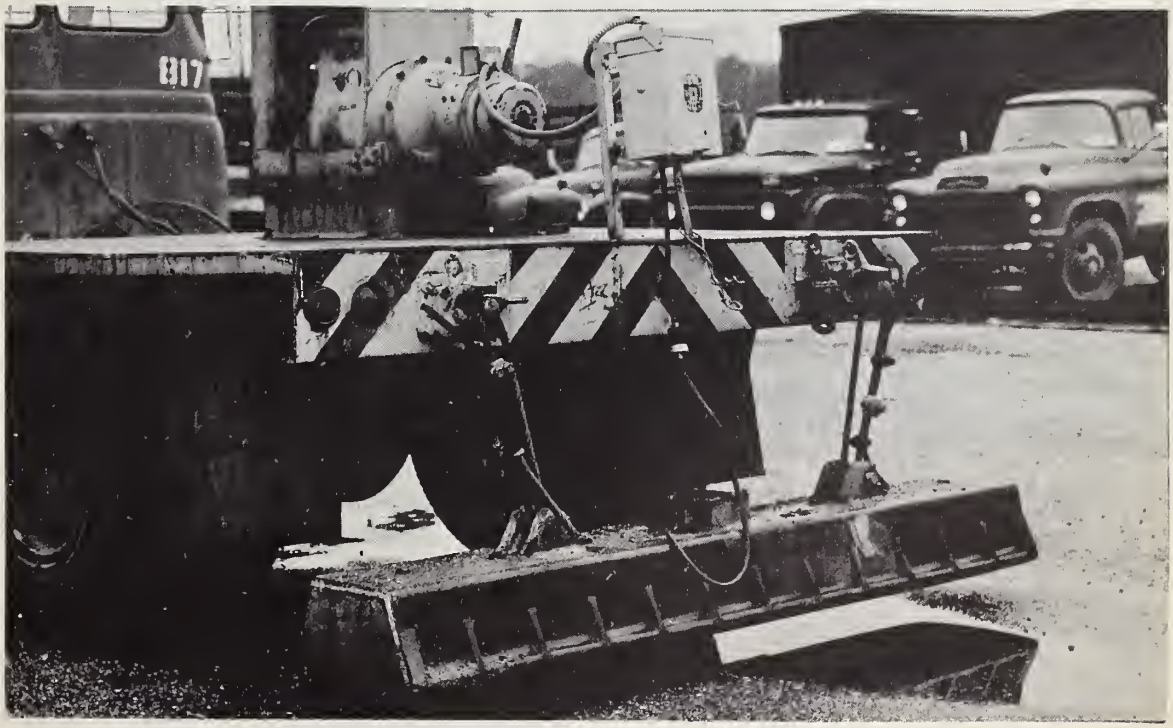
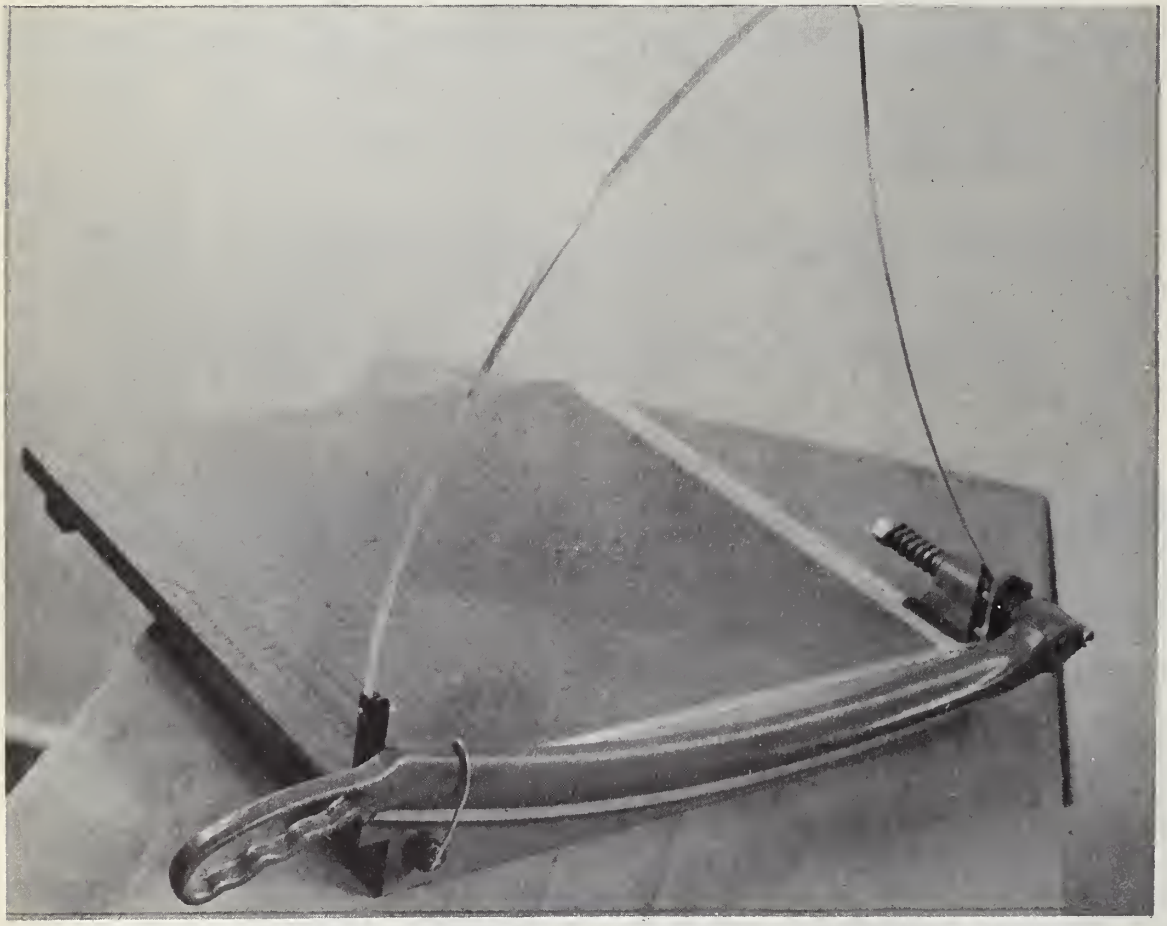


Photo shows an electric magnet mounted on a stake body truck.

GUARD ELIMINATES PAPER CUTTER HAZARD

The common hand-operated paper cutter, with its open end and heavy cutting blade, offers a hazard to the hands and fingers of operators at most Army installations.

The Pueblo Army Depot has eliminated this hazard by installing a guard that affords positive protection to hands and fingers without detracting from the usefulness of the paper cutter. The guard, shown in the photograph, is made of 5/8 inch thick transparent plastic. An opening along the bottom edge of the guard permits easy sliding of paper under the cutting knife.



Photos show paper cutter, with a new plastic shield attached.

EXPLOSIVES SAFETY

MISFIRE REMOVER FOR MORTARS

George C. Thurston, Safety Director Jefferson Proving Ground

In proof firing of mortars, occasionally misfires occur. This presents the problem of safely removing the shell from the tube.

Heretofore, removal was accomplished by detaching the tube from the base of the mortar and then inverting the tube to allow the shell to slide out. This could not be done by remote control, and required one or more employees to be exposed to the hazards involved. A simple device recently developed at Jefferson Proving Ground by Mr. Frank McKay, Mechanical Engineer, makes this a completely remote operation which is safer and more efficient.

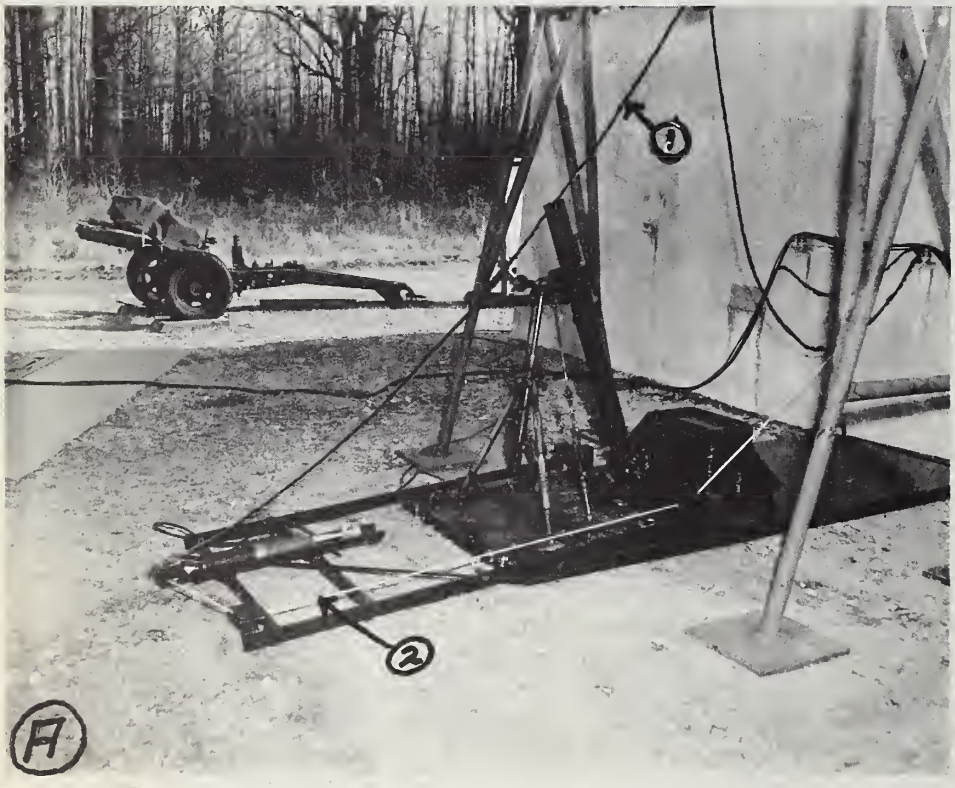
The misfire remover is constructed of light weight aluminum which is fastened to the mortar base and hinged at the corners to permit adjustment when the azimuth of the weapon is changed. A steel cup, with a rubber seal around the opening, rides in a tray mounted on the frame. The remover is operated by two ropes which are color coded for ease of operation. The red rope is attached to the frame at the upper end of the tray and the white rope is attached to the steel cup. The ropes go through the same hole in the barricade wall. The entire removal operation is performed from behind the barricade as follows:

When a misfire occurs the red rope (picture A - No. 1) is pulled, raising the frame from the rest position as shown in picture A to the position as shown in picture B. With the rack in the up position, the tray containing the suction cup is aligned with the mortar tube. The white rope (picture A - No. 2) is then slowly eased off allowing the suction cup to be lowered into the mortar tube.

After the cup has engaged the shell behind the fuze, the 1/4 HP vacuum pump (picture C), which is located behind the barricade, is turned to the "on" position. A suction is created in the steel cup engaging the shell. The white rope is pulled, moving the cup and mortar clear of the tube on to the tray (picture D). The tension on the red rope is slowly released and the frame is lowered to its original position on the ground (picture A). The motor is shut off relieving the suction. The round may then be examined or removed to a safe position.

Work drawings of the device may be requested from:

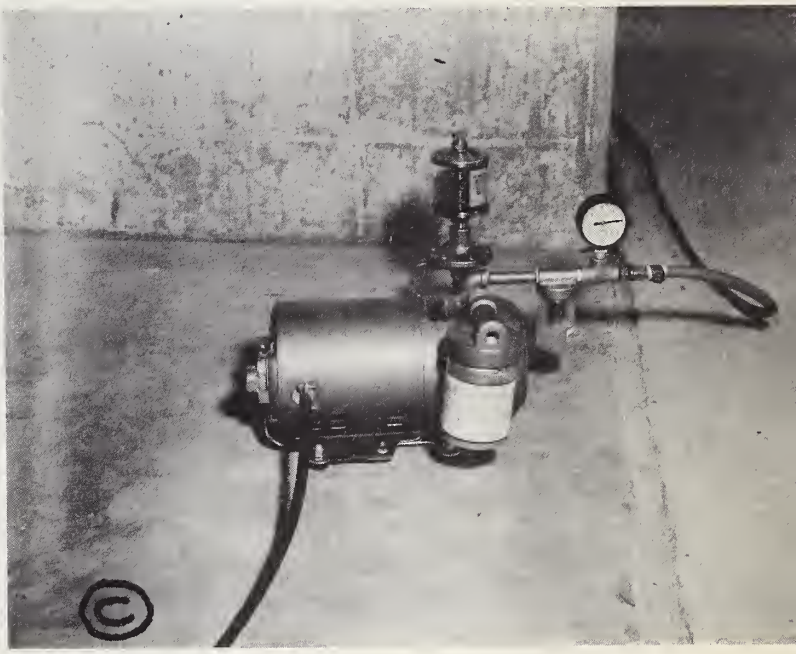
The Commanding Officer
Jefferson Proving Ground
Madison, Indiana 47251



Frame, shown holding mortar shell, is in this position at start and end of the extraction operation. (Picture A)

When frame is in "up" position, the tray containing suction cup is aligned with mortar tube. (Picture B)

Suction to extract shell is supplied by 1/4 HP vacuum pump, located behind barricade. (Picture C)



The Mortar Shell, held by the suction cup, is pulled clear of the tube on to tray. (Picture D)

REPAIR IT WITH FIBER GLASS
George C. Thurston, Safety Director Jefferson Proving Ground

Fuel tanks on vehicles do get punctured, and they will continue to get punctured unless a different method or material is used in their construction.

Repairing these punctures becomes an involved and dangerous process unless done properly. (Editor's Note: See article "Removing Flammable Vapors and Liquids from Containers", September 1963 - AMC Safety Digest.)

At Jefferson Proving Ground the punctured tank is patched with fiber glass of the type used for body repair work. This method eliminates the necessity of removing the tank from the vehicle, purging, welding, and replacement.

On small punctures the tank need not be emptied, for the seepage of gas will not affect the work area or the hardening of the fiber glass. If the puncture is large, permitting more than just "seepage," the fuel level should be lowered below the puncture before repairs are made.

By using this method of repair, down time caused by a vehicle tank puncture has been reduced from 3-1/2 hours, to one-half hour, with a monetary savings of approximately $10.00. More importantly, it reduces the hazards normally associated with repairing of fuel tanks.

To date, only vehicle fuel tanks have been repaired with fiber glass. Where the need exists, it could be used for repair of other types of storage tanks and distribution pipes.

****

SAFETY THOUGHT - OLD DRUGS - BAD MEDICINE

Clear your medicine cabinets of unused prescription drugs, advised the American Medical Association. These drugs can deteriorate, causing illness if you take them.

Three people who recently took aged tetracycline capsules, left over from previous illnesses, became severely nauseated and suffered symptons suggestive of diabetes. All had to be hospitalized for several days and they required a month to recover. Tests showed the drug had "degraded" into other chemicals.

DO YOU KNOW?

In order to perform their assigned duties, safety personnel must recognize unsafe conditions and practices and be prepared to furnish authoritative information based upon the applicable publications. Here are ten questions that will check your knowledge of what is required under different circumstances. The correct answers and references appear on pages 37 and 38.

1. What is the minimum quantity of water that will be stored for use in fighting fires in explosives manufacturing areas?

   Answer:

   Reference:

2. What precautionary measures must be observed prior to leaving a powered industrial truck unattended?

   Answer:

   Reference:

3. At what distance from another aircraft may an aircraft containing 1,000 lbs. of Class 4 ammunition be refueled?

   Answer:

   Reference:

4. When an Army employee drives his own automobile while performing travel on official business, should the miles he drives be included in the data reported on DA Form 2398, the Summary of Accident Exposure?

   Answer:

   Reference:

5. What instructions will be followed by safety personnel when current directives fail to contain the requirements on any phase of explosives area fire protection?

   Answer:

   Reference:

6. What is the recommended method for grounding battery-powered materials handling equipment that is used for handling partially loaded ammunition?

   Answer:

   Reference:

7. What is the minimum safe distance from a radio transmitter of 250 to 500 watts transmitting power at which blasting caps may be stored or handled?

   Answer:

   Reference:

8. What is the minimum number of personnel that may be engaged in the disposal and destruction operations involving extra-hazardous explosives?

   Answer:

   Reference:

9. What two items must be provided at a designated smoking location within a munitions plant?

   Answer:

   Reference:

10. When a bench-type grinder is equipped with a protective eye shield, is it necessary for the operator to wear goggles?

    Answer:

    Reference:

NATIONAL SAFETY COUNCIL AWARDS FOR FY 1963

The following elements of the U. S. Army Materiel Command have won National Safety Council safety awards for their FY 1963 Safety Programs. Awards were based on evaluations and nominations submitted by major subordinate commands to AMC, HQ.

Personnel of those installations which have won these awards are congratulated for their efforts in supporting safety.

Awards of Honor

San Francisco Procurement District, U. S. Army
Philadelphia Procurement District, U. S. Army
Blue Grass Army Depot
Umatilla Army Depot
Tobyhanna Army Depot
U. S. Army Engineer Supply Control Office
Joliet Arsenal
U. S. Army Weapons Command
Sierra Army Depot
Michigan Army Missile Plant
New York Procurement District, U. S. Army
Birmingham Procurement District, U. S. Army
U. S. Army Engineer Procurement Office
U. S. Army Missile Command
U. S. Army Mobility Command
U. S. Army Ballistic Research Laboratories
Tooele Army Depot

Awards of Merit

U. S. Army Munitions Command
Seneca Army Depot
Watervliet Arsenal
U. S. Army Airborne Electronics and Special Warfare Board
Chicago Procurement District, U. S. Army
Cleveland Procurement District, U. S. Army
Charlotte Army Missile Plant
Watertown Arsenal
U. S. Army Electronics Materiel Support Agency
U. S. Army Aviation and Surface Materiel Command
Pantex Ordnance Plant
Cleveland Army Tank-Automotive Plant
Fort Detrick
Erie Army Depot
Lexington Army Depot
Aberdeen Proving Ground
U. S. Army Missile Support Command
Red River Army Depot

Iowa Army Ammunition Plant
Holston Army Ammunition Plant
Milan Army Ammunition Plant
New Cumberland Army Depot
Atlanta Army Depot
Benicia Arsenal
Longhorn Army Ammunition Plant
Lake City Army Ammunition Plant
Lone Star Army Ammunition Plant
U. S. Army Maintenance Board
U. S. Army Camp Stanley Storage Activity
U. S. Army Area Support Office, Chicago
Badger Army Ammunition Plant
Sunflower Army Ammunition Plant

NEW SAFETY FILMS NOW AVAILABLE

TF 55-3412, a 12 minute, 16mm, color film entitled, "Operation of the M-151 1/4 ton Utility Truck" was scheduled for distribution to the Army Film and Equipment Exchanges on or about 15 December 1963.

TF 46-3408, "Use of the Martin-Baker Ejection Seat" has been distributed as part of the educational and safety training literature program of the U. S. Army Board for Aviation Accident Research. This film should be used to the greatest extent possible, as part of the preflight briefing for all first-time OV-1 (Mohawk) passengers.

Brig. General David B. Parker, U. S. Army Aviation and Surface Materiel Command is shown receiving the AMC Award of Merit. Attending were Major General Alden K. Sibley, Commanding General, and Brig. General H. D. Edson, Deputy Commanding General, Mobility Command.

Colonel T. B. Simpson, Commanding Officer, U. S. Army Engineer Supply Control Office is shown accepting the AMC Award of Honor from Brig. General John B. Gramzow, Commanding General, U. S. Army Tank-Automotive Command while Mr. Robert J. Shirock, Safety Director, MOCOM, looks on.

Brig. General H. D. Edson, Deputy Commanding General, U. S. Army Mobility Command is shown presenting AMC safety awards to MOCOM installations.

Photo 1

Photo 2

Photo 3

Photo 4

Photo #1 shows Mr. Harry K. McKinney, Plant Manager for Chrysler Missile Division accepting the Award of Merit for the Michigan Army Missile Plant. Photo #2 shows Colonel H. J. Jackson, Commanding Officer, U. S. Army Engineer Procurement Office, Chicago, Illinois accepting the Award of Merit. Photo #3 shows Major Jack Schaeffer, Commanding Officer, Cleveland Army-Tank Automotive Plant and Mr. Frank Elges, Plant Manager, Cadillac Motor Car Division, General Motors accepting the Award of Merit. Photo #4 shows Captain F. M. Mueller, Jr., Commanding Officer, Lima Army Modification Center accepting the Commendation for Safety.

AMC AWARD OF MERIT PRESENTED WATERTOWN ARSENAL

Major General John G. Zierdt, Commanding General, U. S. Army Missile Command is shown presenting the Army Materiel Command Award of Merit for Safety for FY 1963 to Francis P. Farley, Safety Director, for Watertown Arsenal's safety accomplishments. Colonel Erik W. Jordahn, Commanding Officer and Philip LaTorre, Chief, Industrial Hygiene and Safety Office are shown to the right. General Zierdt congratulated personnel of Watertown Arsenal for a reduction of 52% in injuries and 49% in costs of accidents.

* *

NATIONAL SAFETY COUNCIL AWARDS

Umatilla Army Depot has been awarded the NSC Award of Merit for a no-injury record of 1,439,976 man-hours from 7 June 1962 to 9 November 1963.

Watervliet Arsenal won the NSC Award of Honor for 3,413,113 man-hours without a disabling injury from 8 February 1963 to 9 September 1963.

Tobyhanna Army Depot will be presented the National Safety Council Award of Merit for 1,724,640 man-hours without a disabling injury from 1 July 1963 to 30 November 1963.

GENERAL SERVICES ADMINISTRATION

RULES AND REGULATIONS GOVERNING PUBLIC BUILDINGS AND GROUNDS

Section 201.00, Chapter VIII, Title 2, Real Property Management, Regulations of the General Services Administration

1. AUTHORITY. These rules and regulations are promulgated pursuant to Public Law 566, 80th Congress, approved June 1, 1948 (40 U.S.C. 318), and the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended.
2. APPLICABILITY. These rules and regulations apply to all Federal property under the charge and control of the General Services Administration and to all persons entering in or on such property. Unless otherwise stated herein, Federal property under the charge and control of the General Services Administration is referred to as "property," and "public space" means the General Services Administration controlled entrances, lobbies, foyers, corridors, and auditoriums when used for public meetings. It is the responsibility of the occupant agencies to require observance of these rules and regulations by their employees.
3. RECORDING PRESENCE. Persons entering or leaving properties during periods when such properties are closed to the public shall sign the register and/or display authorized identification documents when requested by the guard, watchman, or other authorized individuals.
4. PRESERVATION OF PROPERTY. It is unlawful to willfully destroy, damage, or remove property or any part thereof.
5. CONFORMITY WITH SIGNS AND EMERGENCY DIRECTIONS. Persons in and on property shall comply with official signs of a prohibitory or directory nature, and, during emergencies, with the directions of authorized individuals.
6. NUISANCES. The use of loud, abusive, or otherwise improper language, unwarranted loitering, sleeping or assembly, the creation of any hazard to persons or things, improper disposal of rubbish, spitting, prurient prying, the commission of any obscene or indecent act, or any other unseemly or disorderly conduct on property, and throwing articles of any kind from a building and climbing upon any part of a building is prohibited.
7. GAMBLING. Participating in games for money or other personal property, or the operation of gambling devices, the conduct of a lottery or pool, or the selling or purchasing of numbers tickets, in or on property is prohibited.
8. INTOXICATING BEVERAGES AND NARCOTICS. Entering property or the operating of a motor vehicle thereon, by a person under the influence of intoxicating beverages or narcotic drug, or the consumption of such beverages or the use of such drug in or on property is prohibited.
9. SOLICITING, VENDING, DEBT COLLECTION, AND DISTRIBUTION OF HANDBILLS. The soliciting of alms and contributions, commercial soliciting and vending of all kinds, the display or distribution of commercial advertising, or the collecting of private debts, in or on property, is prohibited. This rule does not apply to national or local drives for funds for welfare, health, and other purposes sponsored or approved by the occupant agencies, concessions, or personal notices posted by employees on authorized bulletin boards. Distribution of material such as pamphlets, handbills, and flyers is prohibited without prior approval of authorized individuals.
10. PHOTOGRAPHY FOR NEWS, ADVERTISING, OR COMMERCIAL PURPOSES. Except where security regulations apply, or a Federal court order or rule prohibits it, photographs for news purposes may be taken in public space without prior permission. Photographs for advertising and commercial purposes may be taken in public space only with the prior written permission of the building manager. Photographs for news, advertising, or commercial purposes may be taken in space occupied by a tenant agency only with the consent of the occupying agency concerned.
11. DOGS AND OTHER ANIMALS. Dogs and other animals, except seeing-eye dogs, shall not be brought upon property for other than official purposes.
12. VEHICULAR AND PEDESTRIAN TRAFFIC. (a) Drivers of all vehicles in or on property shall drive in a careful and safe manner at all times and shall comply with the signals and directions of guards and all posted traffic signs; (b) the blocking of entrances, driveways, walks, loading platforms, or fire hydrants in or on property is prohibited; (c) except in emergencies, parking in or on property is not allowed without a permit. Parking without authority, parking in unauthorized locations or in locations reserved for other persons or continuously in excess of 18 hours without permission, or contrary to the direction of posted signs is prohibited. This paragraph may be supplemented from time to time with the approval of the Regional Administrator by the issuance and posting of specific traffic directives as may be required and when so issued and posted such directives shall have the same force and effect as if made a part hereof.
13. WEAPONS AND EXPLOSIVES. No person while on property shall carry firearms, other dangerous or deadly weapons, or explosives, either openly or concealed, except for official purposes.
14. NONDISCRIMINATION. There shall be no discrimination by segregation or otherwise against any person or persons because of race, creed, color, or national origin in furnishing, or by refusing to furnish to such person or persons the use of any facility of a public nature, including all services, privileges, accommodations, and activities provided thereby on property.
15. PENALTIES—OTHER LAWS. Whoever shall be found guilty of violating these rules and regulations is subject to fine of not more than $50 or imprisonment of not more than 30 days, or both. Nothing contained in these rules and regulations shall be construed to abrogate any other Federal laws or regulations, or any State and local laws and regulations, applicable to any area in which property is situated.

* GSA Safety Regulations

Dated: September 20, 1963

Bernard L. Boutin
Administrator of General Services

WELL DID YOU KNOW?

Safety personnel should know most of the answers to the questions on pages 29 and 30. Just in case the situations are different from those encountered at your installation, the answers and references are furnished below.

1. At least 1,000,000 gallons of water shall be stored or available for fire fighting in load line and in explosive manufacturing areas.

   Reference: Paragraph 1225a, AMCR 385-224.

2. Controls shall be neutralized, power shut off, key or connector plug removed and forks left in a down position.

   Reference: Paragraph 813, ASA Code B56.1-1959

3. Inhabited building distance (i.e., 1200 feet).

   References: Paragraph 2304a and Table 1733, AMCR 385-224.

4. No

   Reference: Paragraph 6d(1)(b)3, AR 385-40.

5. The mandatory provisions of the National Board of Fire Underwriters Standards shall be followed where they apply. Installations will also be guided by the advisory suggestions, where they apply, contained in these NBFU Standards and the current

publications of the National Fire Protection Association - particularly the latest edition of the Crosby-Fiske-Forster Handbook of Fire Protection.

Reference: Paragraph 1203b, AMCR 385-224.

6. The use of two or more electrically conductive tires is recommended.

Reference: Paragraph 2403c(4), AMCR 385-224.

7. 450 feet

Reference: Paragraph 2716b(5) and Table 2716, AMCR 385-224.

8. Two

Reference: Paragraph 2711b, AMCR 385-224.

9. A proper ash receiver and an acceptable type fire extinguisher.

Reference: Paragraph 1603b, AMCR 385-224.

10. Goggles shall be worn by all employees on every grinding operation.

Reference: Paragraph 920b, AMCR 385-224.

HEADQUARTERS
UNITED STATES ARMY MATERIEL COMMAND
WASHINGTON, D. C., 20315

March 1964

AMC Pamphlet 385-58 is published for the information of all personnel of the U. S. Army Materiel Command.

(AMCAD-S)

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